

Claims

- Sub 31
1. A sole for an article of footwear, the sole comprising:
- an insole layer defining a plurality of first openings, wherein a substantial portion of the plurality of first openings are interconnected;
 - a support layer defining a plurality of second openings that partially overlap the plurality of first openings; and
 - an outsole layer defining at least one third opening that at least partly overlaps the plurality of second openings.
2. The sole according to claim 1, wherein the plurality of first openings are distributed over substantially the entire insole layer.
3. The sole according to claim 1, wherein the plurality of first openings are generally circularly shaped.
4. The sole according to claim 2, wherein a first portion of the plurality of first openings are disposed in at least one of a ball region and a heel region of the sole, a second portion of the plurality of first openings are disposed in other regions of the sole, and the openings of the first portion are smaller than the openings of the second portion.
5. The sole according to claim 4, wherein the openings of the first portion are less than about 3 mm in diameter and the openings of the second portion are greater than about 4 mm in diameter.
6. The sole according to claim 1, wherein the insole layer further defines a channel for interconnecting a portion of the plurality of first openings.
7. The sole according to claim 6, wherein the channel is disposed on a bottom side of the insole layer.
8. The sole according to claim 1, wherein the support layer comprises a substantially compression resistant semi-rigid chassis.
9. The sole according to claim 1, wherein the support layer controls deformation properties of the sole.

10. ~~The sole according to claim 1, wherein the support layer extends along at least one of a heel region and a ball region of the sole.~~
11. The sole according to claim 1, wherein the plurality of second openings are disposed in at least one of a toe region, an arch region, and an upwardly extending portion of the sole.
12. The sole according to claim 11, wherein the plurality of second openings form a grill pattern.
13. The sole according to claim 1, wherein the support layer further comprises a support element disposed in an arch region of the sole and the support element interconnects a forefoot part and a rearfoot part of the sole.
14. The sole according to claim 13, wherein at least one of the support layer and the support element sideways encompasses a wearer's foot in at least one of the arch region and a heel region of the sole.
15. The sole according to claim 1, wherein the outsole layer further comprises a plurality of sole elements.
16. The sole according to claim 15, wherein the plurality of sole elements includes a forefoot element and a rearfoot element.
17. The sole according to claim 1, wherein the outsole layer extends along at least one of a heel region and a ball region of the sole.
18. The sole according to claim 1, wherein the at least one third opening is disposed in at least one of a toe region and an arch region of the sole.
19. The sole according to claim 1, wherein the outsole layer sideways encompasses a wearer's foot in at least one of a heel region and a forefoot region of the sole.
20. The sole according to claim 1, wherein the outsole layer comprises a cushioning layer and a tread layer.
21. The sole according to claim 1, wherein a membrane is disposed between the support layer and the insole layer.

An article of footwear comprising:
an upper; and

a sole, the sole comprising:

an insole layer defining a plurality of first openings, wherein a substantial portion of the plurality of first openings are interconnected;

a support layer defining a plurality of second openings that partially overlap the plurality of first openings; and

an outsole layer defining at least one third opening that at least partly overlaps the plurality of second openings.

23. The article of footwear according to claim 22, further comprising a flexible net-like element disposed in the upper.
24. The article of footwear according to claim 23, wherein the flexible net-like element is disposed in the heel region of the upper.
25. The article of footwear of claim 22, further comprising a climate control sock.
26. The article of footwear of claim 25, wherein the climate control sock comprises a two layer mesh construction.
27. The article of footwear of claim 22, wherein the upper comprises a reinforced mesh material.

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